

O' Connell

an optical device that conducts an optoelectric conversion, said optical device comprising at least a surface optical device and being disposed between said electric connecting portion and said optical transmission means,

wherein said optical transmission means and said optical device are fixed such that said optical transmission means is optically coupled to said optical device, and said electric connecting portion is detachable.

29. (Not Presently Amended) An optical wiring device according to claim 28, wherein said optical device includes a light emitting device and a light receiving device, which light receiving device is a p-i-n photodiode or a metal-semiconductor-metal (MSM) photodiode.

30. (Not Presently Amended) An optical wiring device according to claim 28, wherein said optical device has a plurality of surface optical devices with independent electrodes mounted in a flip-chip manner.

31. (Not Presently Amended) An optical wiring device according to claim 28, wherein an integrated electronic circuit device that drives said optical device is disposed in said optical connecting device.

32. (Not Presently Amended) An optical wiring device according to claim 28, wherein said optical device is a surface emitting device having multi-layer reflective mirrors.

33. (Not Presently Amended) An optical wiring device according to claim 28, wherein said optical transmission means includes a metal wiring.

34. (Not Presently Amended) An optical wiring device according to claim 33, wherein the metal wiring is formed as a wiring pattern.

35. (Not Presently Amended) An optical wiring device according to claim 28, wherein said optical device is driven by a CMOS buffer of an external apparatus connected to said electric connecting portion.

36. (Not Presently Amended) An optical wiring device according to claim 28, wherein said electric connecting portion includes a recessed electric coupler.

37. (Not Presently Amended) An optical wiring device according to claim 28, wherein a plate having a window is disposed between said optical device and said optical transmission means and the window has a lens.

38. (Not Presently Amended) An optical wiring device according to claim 28, wherein said optical device is prepared by a process comprising the steps of forming an active layer on a substrate and removing said substrate.

39. (Not Presently Amended) An optical wiring device according to claim 28, wherein said optical transmission means comprises a single mode fiber.

*C1
amp.*

40. (Not Presently Amended) An optical wiring device according to claim 28, wherein said optical transmission means is fixed in said optical connecting device by V-shaped grooves on a silicon substrate.

41. (Not Presently Amended) An optical wiring device according to claim 28, wherein said optical transmission means comprises a waveguide sheet in which waveguide cores are arranged in an array.

42. (Not Presently Amended) An optical wiring device comprising:
an electric connecting portion;
optical transmission means for transmitting an optical signal; and
an optoelectric converting portion, said optoelectric converting portion including a plurality of surface emitting devices and a plurality of surface receiving devices and being disposed between said electric connecting portion and said optical transmission means,
wherein said optical transmission means and said optoelectric converting portion are fixed such that said optical transmission means is optically coupled to said optoelectric converting portion, and said electric connecting portion is detachable.

43. (Not Presently Amended) An optical wiring device comprising:
an electric connecting portion;
optical transmission means for transmitting an optical signal; and

an optoelectric converting portion, said optoelectric converting portion including a plurality of surface optical devices arranged in a two-dimensional array and being disposed between said electric connecting portion and the optical transmission means,

wherein said optical transmission means and said optoelectric converting portion are fixed such that said optical transmission means is optically coupled to said optoelectric converting portion, and said electric connecting portion is detachable.

44. (Not Presently Amended) An optical wiring device comprising:
an electric connecting portion;
optical transmission means for transmitting an optical signal; and
an optoelectric converting portion, said optoelectric converting portion including at least a surface optical device and through-hole and being disposed between said electric connecting portion and said optical transmission means,
wherein said optical transmission means and said optoelectric converting portion are fixed such that said optical transmission means is optically coupled to said optoelectric converting portion, and said electric connecting portion is detachable.

45. (Not Presently Amended) An electronic device comprising an optical wiring device according to claim 28 to connect at least first and second boards.

46. (Not Presently Amended) An electronic device comprising an optical wiring device according to claim 42 to connect at least first and second boards.

47. (Not Presently Amended) An electronic device comprising an optical wiring device according to claim 43 to connect at least first and second boards.

48. (Not Presently Amended) An electronic device comprising an optical wiring device according to claim 44 to connect at least first and second boards.

49. (Not Presently Amended) An electronic device comprising a display, a computer, and a connecting means for wiring said display and said computer, wherein said connecting means comprises an optical connecting device according to claim 28.

50. (Not Presently Amended) An electronic device comprising a display, a computer, and a connecting means for wiring said display and said computer, wherein said connecting means comprises an optical connecting device according to claim 42.

51. (Not Presently Amended) An electronic device comprising a display, a computer, and a connecting means for wiring said display and said computer, wherein said connecting means comprises an optical connecting device according to claim 43.

52. (Not Presently Amended) An electronic device comprising a display, a computer, and a connecting means for wiring said display and said computer,